Applicant: Gregory Ehlers
Serial No.: 10/674,621
Group Art Unit: 2636

REMARKS

No new matter is added by this Response. The present application was filed on September 30, 2003 with original claims 1-37. In a previous amendment, claim 1 was amended, claim 2 was cancelled and new independent claim 38 was added. The claims remaining in consideration are claims 1 and 3-38. Claims 1 and 38 are independent claims. Reconsideration is respectfully requested.

A telephone interview with the Examiner was conducted on October 3, 2005. The pending claims with respect to the previous 35 USC §102(b) rejection over US Patent 5,913,827 issued June 22, 1999 to Peter Gregory Gorman ("Gorman") was discussed. Applicant asserted that Gorman did not include each and every limitation of the independent claims, and was thus, improper. The Examiner agreed.

Claims 1, 3-6, 6-16, 19, 20, 30, 31, 37, and 38 were rejected under 35 USC §103(a) as being anticipated by Gorman in view of US Patent 4,746,113 issued May 24, 1998 to Robert M. Kissel ("Kissel"). This rejection is respectfully traversed.

Independent claim 1 sets forth a system having a controller, a control point and a remote node. The controller is responsive to an operator for controller operation of a machine or a process. The control point is coupled to the controller and is located with respect to the machine or the process. *The remote node is located with respect to the operator and detects a predetermined condition of the operator and automatically delivers a fault signal to the control point through a wireless communications channel in response to detecting the predetermined condition of the operator.* The controller controls operation of the one of the machine or process as a function of the presence or absence of the fault signal.

Thus, the remote node, which is located with respect to the operator, i.e., in close proximity thereto, determines whether a predetermined condition of the operator is present. For example, the predetermined condition could be the location of the operator with respect to the controller or control point. In other words, operation of the controller is dependent upon the operator being within a predetermined distance thereof.

In another example, the remote node senses one or more characteristics of the operator, determines whether the predetermined condition exists as a function thereof. For example, whether or not the operator is conscious.

If the predetermined condition exists, e.g., the operator is out of bounds or unconscious, then the remote node detects or determines the presence of the predetermined condition and transmits a fault signal. The controller controls operation of the one of the machine or process as a function of the presence or absence of the fault signal. For example, the controller may be adapted to prevent start-up or to shut-down, if the operator is not within a predetermined distance.

Gorman patent discloses a personal monitor and method for monitoring a biomedical condition, in other words, a heart monitor which utilizes wireless data transmission. The '827 patent is aimed at reducing the interference using encoding techniques over the wireless data link.

Gorman has two disclosed embodiments. In the first embodiment, shown generally in Figures 1-6, a heart monitor includes a chest transmitter unit 12 and a wrist display unit 14. The chest transmitter 12 digitizes an ECG signal (see Figure 2) and transmits the signal to the wrist unit 14. The chest transmitter 12 receives a frequency change signal at receiver 40 which is evaluated at signal evaluator 42. Operation of the receiver 40 and signal evaluator 42 are discussed on column 11, lines 17-50. However, it should be noted that the frequency change signal and the receiver 40 and signal evaluator 42 do not act on the heart rate data, but rather, at the accuracy of the wireless data transmission.

Thus, the chest transmitter 12 simply senses the ECG signal, encodes or digitizes the signal and transmits the pulse signal over the wireless data link to the wrist unit 14.

The wrist unit 14 receives the encoded signal, stores the heartbeat data in a memory unit 50, and displays to the user his or her heartbeat (column 12, line 5-14). A comparator or signal evaluator 48 is used to separate the encoded signal into its identification part and its data part. The identification part is user to ensure that the received signal is from the correct wrist unit 14. The data part is evaluated to make sure the signal was received error free.

In the second disclosed embodiment, the wrist unit 14 is incorporated directly into exercise equipment (see Figures 7 and 8 and accompanying text). In the second disclosed embodiment, sensed data, which can be the heart rate, e.g., pulse or temperature, are again sensed using the chest transmitter 12 and relayed to the unit 14, which is now

incorporated into the exercise equipment. The unit 14 includes a microprocessor 72 which evaluates the data and may adjust the intensity of the workout as a function thereof.

With respect to Gorman, the Examiner makes the following statements:

> Regarding claim 1, the claimed control point (the microprocessor 72 provides the logic, signal recognition and identification and instructions to the exercise parameter control unit 74 for controlling the exercise intensity in accordance with a desire [sic] exercise profile based on the target person and in response to the received heart rate condition of the target person ...; and the control point ...; but **Gorman** fails to disclose the remote node located with respect to the operator of the one of machine and process for detecting a predetermined condition of the operator and automatically delivering a fault signal to the control point through a wireless communications channel in response to detecting the predetermined condition of the operator, the controller for controlling operation of the one of the machine or presence or absence of the fault signal.

See current office action, page 2, Section 1 (column and line citations deleted).

Thus, the Examiner correctly recognizes that Gorman does not meet all of the limitations of independent claim 1. However, the Examiner then ***incorrectly*** interprets Gorman:

> However, **Gorman** teaches that a person's wrist unit 14 contains a receiver 46 for receiving a person's heart rate or ECG signals from the chest unit 12, which is analyzed by a signal evaluator 47 to determine if any wireless transmission errors therein, correcting of the wireless transmission error signal, then automatically transmits the error signal to a remote receiver 46 located at an exercise machine 70 via wireless communication.

Under the Examiner's interpretation, Gorman teaches a chest unit 12 for sensing a person's heart rate and transmitting the heart rate, using wireless communication, to a wrist unit 14, which is then automatically transmitted to a remote receiver 46 at an exercise machine 70.

Gorman makes no such teaching.

As discussed above, Gorman discloses a personal monitor and method for monitoring a biomedical condition and has two embodiments.

In the first embodiment, the system includes the chest unit and the wrist unit. The heart rate data is transmitted from the chest unit to the wrist unit. Thus, in the first

embodiment, the wrist unit is used simply to decode the data and display the data to the user.

In the second embodiment, the system also ***only*** includes the chest unit and the wrist unit. However, in this embodiment, the wrist unit 14 is embodied directly into the exercise bike 70 as receiver 14 (see Figure 7) and accompanying text:

> Fig. 7 schematically illustrates the use of the present monitor with exercise equipment, in this case an exercise bike. The transmitter unit of the monitor is located on the person while the receiver unit is located on the exercise equipment. The receiver includes a display which indicates the biomedical response, such as heart rate, and also provides an electrical signal for controlling one or more exercise parameters, such as pedal rate and resistance. In FIG. 7, the transmitter unit 12 provides a digitally encoded signal 16 in a wireless manner to the receiver 14, which is coupled to the display and controller in the exercise bike 70.

Thus, as in the first embodiment, the Gorman system includes a chest unit which simply senses heart rate and wirelessly transmits the data. Neither the first or second embodiment, includes a chest unit, a wrist unit, and an off-person receiver as suggested by the Examiner.

In either embodiment of the '827 patent, the chest transmitter 12 simply relays the encoded data to the unit 14. The chest transmitter 12 does not detect the presence or absence of a predetermined condition **nor** does the chest transmitter 12 transmit a fault signal when the predetermined condition exists.

Furthermore, an alarm or error condition only exists if the data transmission is getting corrupted and the frequency of the RF network needs to be switched or if communication is totally lost. In both cases, the system requires the operator to choose between stopping their exercise routine or continue under manual control. Gorman does not teach monitoring of the individual's health or consciousness as a function of being able to properly and safely operate a machine or process. The primary feature of Gorman is to overcome the problems found in other RF based heart monitoring devices and to place that in to exercise equipment to achieve a target heart rate based on the monitored heart rate of the individual (see column 3, lines 26-31).

The Examiner attempts to utilize Kissel to correct the deficiencies of Gorman.

Kissel includes a system for use with a resistive weight workout or exercise machine. The invention, like Gorman, provides a means of managing the intensity of the workout which can be controlled manually by the person exercising or using an automated process. Kissel does not monitor any biophysical conditions of the person exercising or use a network to send data from the user to the machine. The invention is designed to increase or decrease the amount of weight used in an exercise routine without requiring the operator to manually add or remove weights from the system. The system supports 3 input signal types that in turn cause weight to be added or removed. These 3 signals are received by a common control processor, which in turn controls a plurality of solenoid driven pins that through their insertion or retraction into their corresponding weight and lifting bar (Fig 3 and Col 3 lines 6-10 & Col 4 lines 31-40), increase or decrease the total number of weights being used for the workout in progress. The signals originate either from the operators manual input or from a defined means of timing the rate of the exercisers rep's and optionally can also use a pressure sensor to determine the strength of the person working out. The system does not teach monitoring any biophysical aspects of the person exercising other than measuring their relative strength if the pressure sensor device is employed. It should be noted that Kissel does not disclose how the pressure sensing device would be implemented and does not provide any claims related to its use or a diagram detailing its implementation. It is therefore unknown how this feature of the invention would be implemented. Kissel does indirectly determine a person's level of fatigue by timing the duration of each repetition of thrusts and return cycles while exercising. This timing method allows the invention to increase or reduce the amount of weight based on these timings by reducing the weight as the level of fatigue increases or in increasing the weight if the level of fatigue reduces. This fatigue monitoring is a common practice in resistive weight training and is referred to as "momentary muscle failure".

Kissel includes an adjustable exercise machine, such as a weight lifting machine. The Kissel system includes a control circuit 39 for adjusting the amount of weight being

lifted by a user 19. The system can adjust the amount of weight as a function of three different inputs: a hand operated switch 25, optical sensors 43, and pressure sensors 47.

The Kissel is operable in a first mode or a second mode. In the first mode, the hand operated switch 25 is built into the handlebars 17 and is used by the user 19 to manually indicate that more weight should be added or weight should be taken off.

In the second mode, the control circuit 39 uses the optical sensors 43 or the pressure sensors 47 to if the user 19 has reached a "momentary muscular failure" and, if so, lightens the weight. The optical sensors 43 are arranged with respect to the weights (see Figures 6, for example) and are used to measure the time it takes for the user to move the weights from the highest position to the lowest position. This is used in a calculation to estimate when the user 19 has reached MMF.

With regard to the use of pressure sensors, all Kissel states is:

> If desired, pressure sensors 47 may provide an input to microcomputer 44 to indicate when the pressure exerted by the user has decreased to a point indicative of a momentary muscular failure.

(see Columns 5, lines 13-17).

Thus, Kissel uses as an input to the control circuit 39 an input switch or sensors (optical or pressure) to measure other inputs ***which are located at the stack of weights, i.e., remote from the user 19.***

Thus, Kissel does not include, *inter alia*, "a remote node located with respect to the operator of the one of a machine and process for detecting a predetermined condition of the operator and automatically delivering a fault signal to the control point through a wireless communications channel in response to detecting the predetermined condition of the operator" as required by independent claim 1.

Since the Gorman Kissel, singularly or in combination, lacks one or more elements of independent claim 1, the §103(a) rejection is improper and must be withdrawn.

Claims 3-6, 6, 8-16, 19, 20, 30, 31, and 37 are ultimately dependent upon allowable claim 1. Therefore, for the reasons set forth above, and based on their own merits, applicants respectfully assert that claims 3-6, 6-16, 19, 20, 30, 31, and 37 are also allowable.

Previously presented independent claim 38 sets forth a system for controlling operation of one of a machine and process. The system includes a control point and a remote node. The control point is located with respect to the one of a machine and process. The remote node is located with respect to an operator of the one of a machine and process for detecting a predetermined condition of the operator and responsively delivering a fault signal to the control point through a wireless communications channel. The predetermined condition is one of a health of the operator, consciousness of the operation, or attentiveness of the operator.

Again, neither Gorman nor Kissel detect a predetermined condition and deliver a fault signal to a control point through a wireless communications channel if the predetermined condition exists.

Thus, application respectfully assert that the §103(a) rejection of independent claim 38 is improper and must be withdrawn.

Claim 7 was rejected under 35 USC §103(a) as being unpatentable over Gorman, Kissel in further view of US Patent 6,529,131 issued March 4, 2003 to Robert Wentworth. This rejection is respectfully traversed.

Claim 7 is ultimately dependent upon allowable claim 1. The '131 patent discloses an electronic tether. The Examiner utilizes the '131 patent to teach that a predetermined distance between a master unit and a slave unit is programmable. However, the '131 patent does not overcome the failures of Gorman and Kissel patent with respect to the limitations of independent claim 1. Thus, applicant respectfully asserts that the §103(a) rejection of claim 7 is improper and must be withdrawn.

Claims 17, 18, and 21-29 were rejected under 35 USC §103(a) as being unpatentable over the Gorman and Kissel in view of US Patent 6,736,759 issued May 18, 2004 to Jack Stubbs et al.

Claims 17, 18, and 21-29 are ultimately dependent upon allowable claim 1. The '759 patent discloses an exercise monitoring system which includes a display unit which may be worn on the wrist of a person exercising and a data acquisition component 20 which also is worn by the person. The display unit 7 may be connected to a computer 8.

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However, the '759 patent does not overcome the shortcomings of the Gorman and Kissel. Therefore, applicant respectfully asserts that, based on the arguments above, and their own merits, that claims 17, 18, and 21-29 are allowable over the cited prior art.

Claims 32-36 were rejected under 35 USC §103(a) as being unpatentable over Gorman and Kissel in view of US Patent 4,932,910 issued to Hayday ("Hayday"). Claims 32-36 are ultimately dependent upon allowable independent claim 1. Hayday does not overcome the failings of Gorman and Kissel. Therefore, based on the arguments above, and based on their own merits, applicant respectfully asserts that claims 32-36 are also allowable.

All of the Examiner's objections and rejections having been successfully traversed and/or made moot, applicant respectfully asserts that the present application is now in condition for allowance. An early Notice of Allowance is solicited.

If the Examiner believes that a telephone interview would be helpful, please contact the undersigned at the number below.

Applicant believes that no fees are due, however, if any become required, the Commissioner is hereby authorized to charge any additional fees or credit any overpayments to Deposit Account 08-2789. Further and favorable reconsideration of the outstanding Office Action is hereby requested.

Respectfully submitted

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Date

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